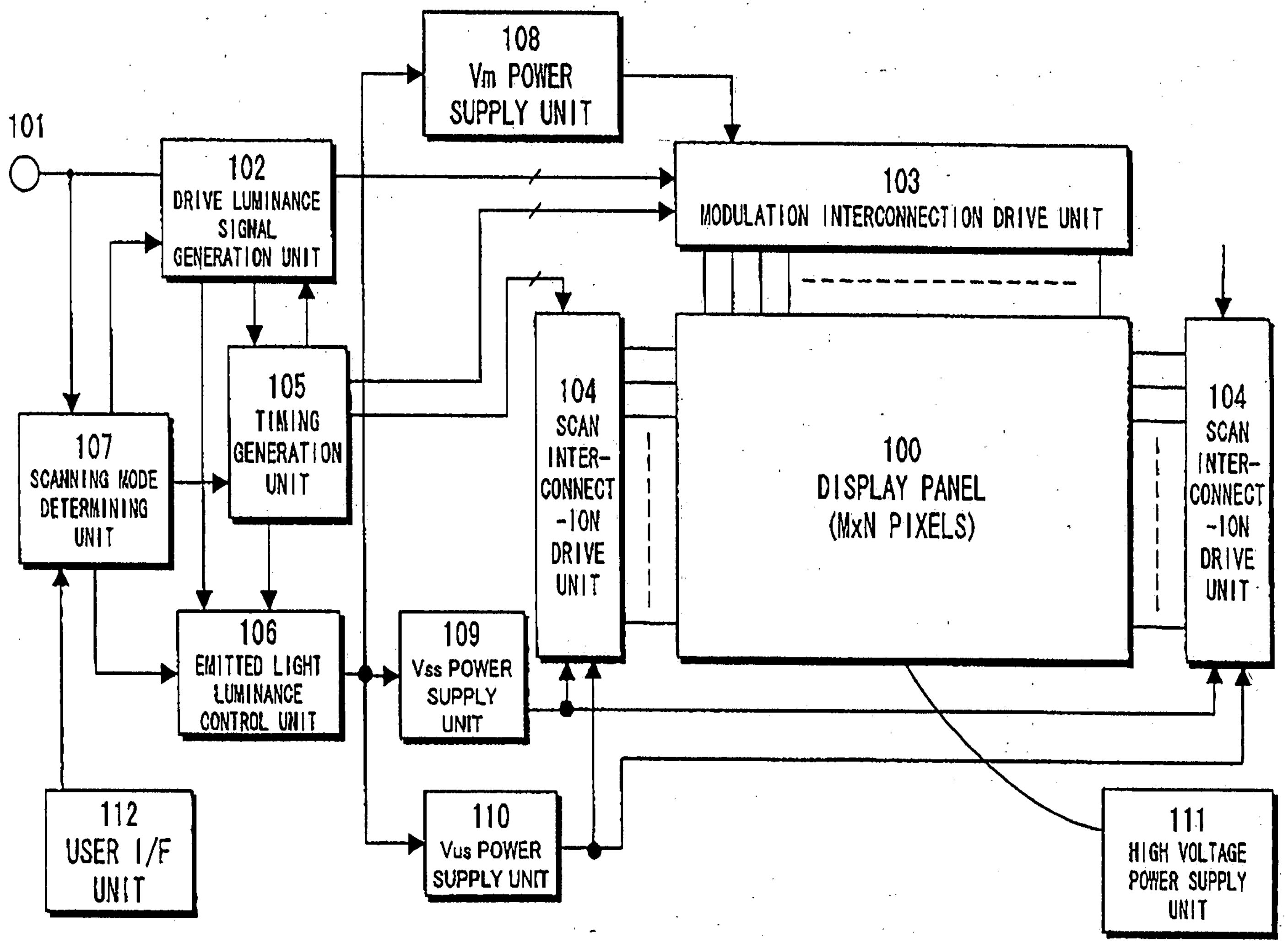
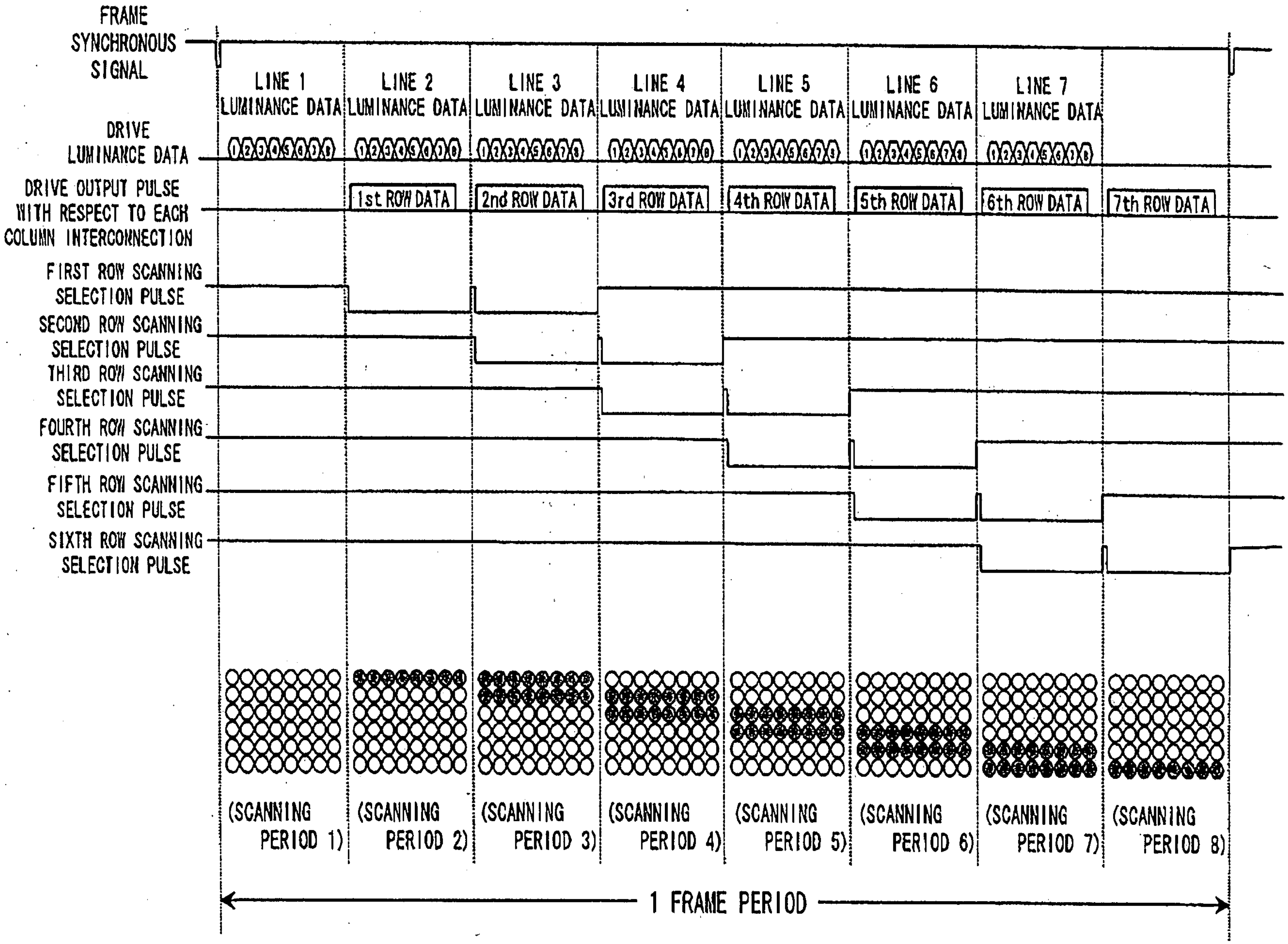

101
102
DRIVE LUMINANCE SIGNAL GENERATION UNIT
108
Vm POWER SUPPLY UNIT
103
MODULATION INTERCONNECTION DRIVE UNIT
107
SCANNING MODE DETERMINING UNIT
105
TIMING GENERATION UNIT
104
SCAN INTER-CONNECT-ION DRIVE UNIT
100
DISPLAY PANEL (MxN PIXELS)
104
SCAN INTER-CONNECT-ION DRIVE UNIT
106
EMITTED LIGHT LUMINANCE CONTROL UNIT
109
Vss POWER SUPPLY UNIT
110
Vus POWER SUPPLY UNIT
112
USER I/F UNIT
111
HIGH VOLTAGE POWER SUPPLY UNIT

Fig.1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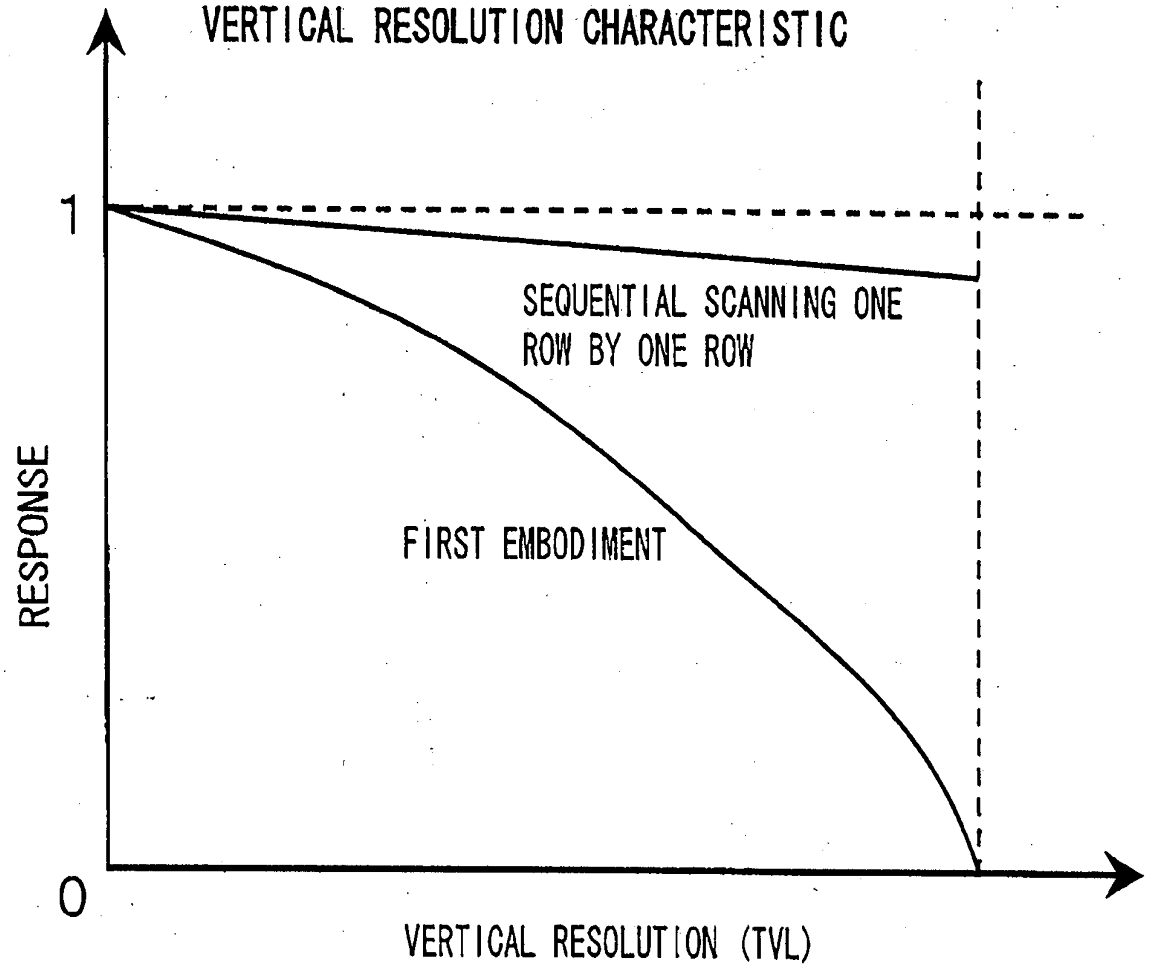
DRIVE OUTPUT PULSE WITH RESPECT TO EACH COLUMN INTERCONNECTION
FIRST ROW SCANNING SELECTION PULSE
SECOND ROW SCANNING SELECTION PULSE
THIRD ROW SCANNING SELECTION PULSE
FOURTH ROW SCANNING SELECTION PULSE
FIFTH ROW SCANNING SELECTION PULSE
SIXTH ROW SCANNING SELECTION PULSE
LINE 1 LUMINANCE DATA
LINE 2 LUMINANCE DATA
LINE 3 LUMINANCE DATA
LINE 4 LUMINANCE DATA
LINE 5 LUMINANCE DATA
LINE 6 LUMINANCE DATA
LINE 7 LUMINANCE DATA
1st ROW DATA
2nd ROW DATA
3rd ROW DATA
4th ROW DATA
5th ROW DATA
6th ROW DATA
7th ROW DATA
(SCANNING PERIOD 1)
(SCANNING PERIOD 2)
(SCANNING PERIOD 3)
(SCANNING PERIOD 4)
(SCANNING PERIOD 5)
(SCANNING PERIOD 6)
(SCANNING PERIOD 7)
(SCANNING PERIOD 8)
1 FRAME PERIOD

Fig.2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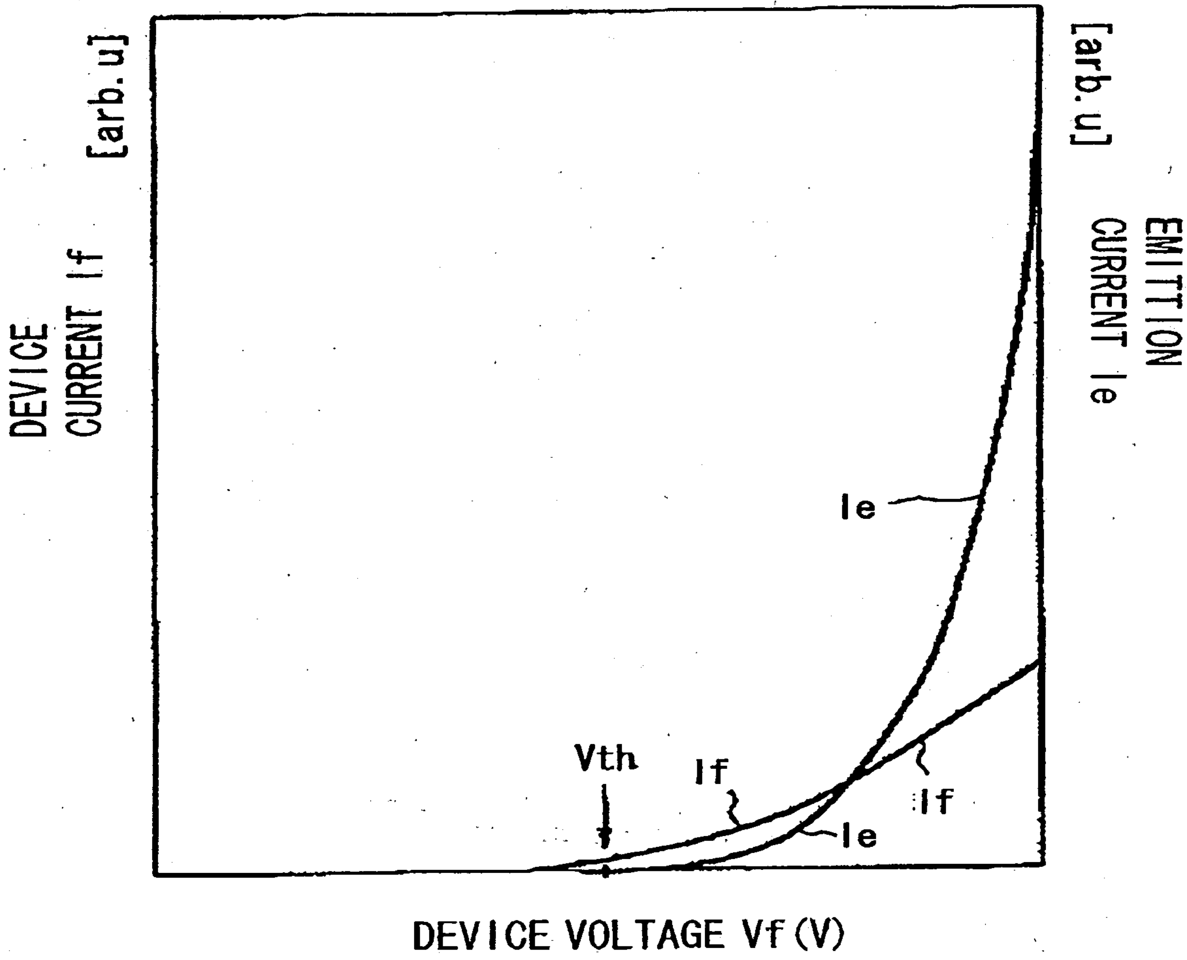
1
RESPONSE
0
SEQUENTIAL SCANNING ONE ROW BY ONE ROW
FIRST EMBODIMENT
VERTICAL RESOLUTION (TVL)

Fig.3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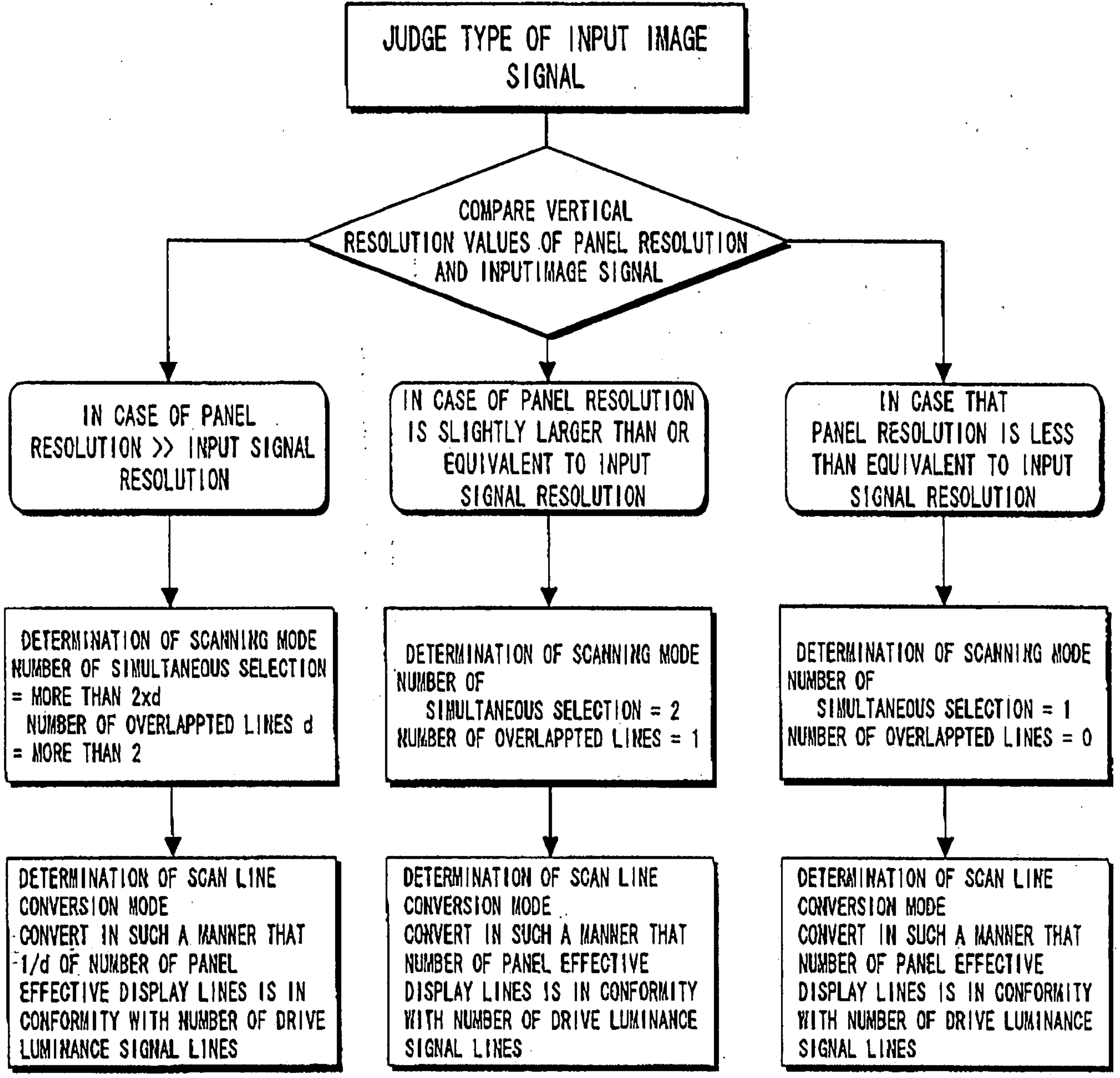
EMITTION CURRENT Ie [arb.u]
Ie
Vth
If
Ie
If
DEVICE VOLTAGE Vf (V)

Fig.4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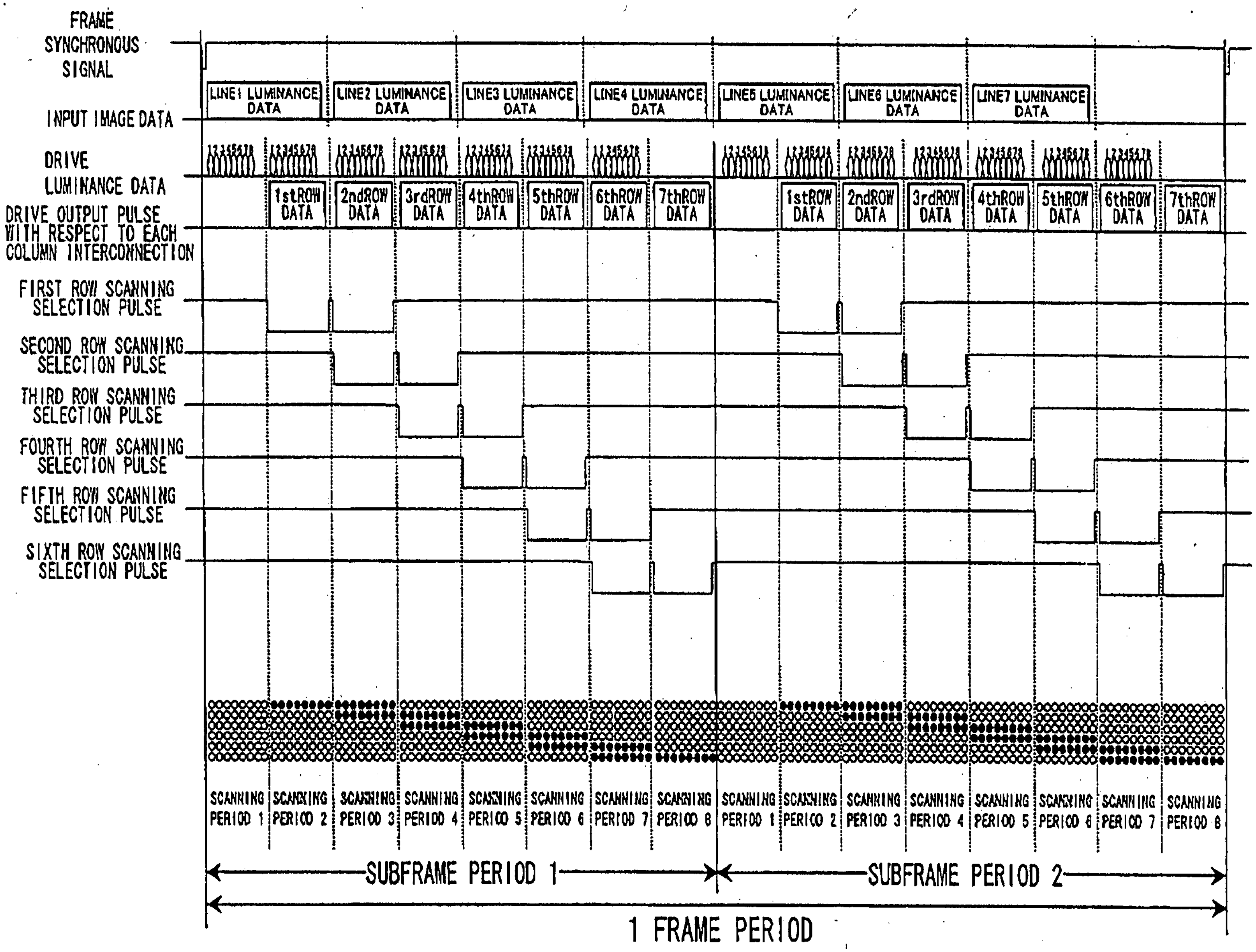
COMPARE VERTICAL RESOLUTION VALUES OF PANEL RESOLUTION AND INPUTIMAGE SIGNAL
IN CASE OF PANEL RESOLUTION >> INPUT SIGNAL RESOLUTION
IN CASE OF PANEL RESOLUTION IS SLIGHTLY LARGER THAN OR EQUIVALENT TO INPUT SIGNAL RESOLUTION
IN CASE THAT PANEL RESOLUTION IS LESS THAN EQUIVALENT TO INPUT SIGNAL RESOLUTION
DETERMINATION OF SCANNING MODE NUMBER OF SIMULTANEOUS SELECTION = MORE THAN 2xd NUMBER OF OVERLAPPTED LINES d = MORE THAN 2
DETERMINATION OF SCANNING MODE NUMBER OF SIMULTANEOUS SELECTION = 2 NUMBER OF OVERLAPPTED LINES = 1
DETERMINATION OF SCANNING MODE NUMBER OF SIMULTANEOUS SELECTION = 1 NUMBER OF OVERLAPPTED LINES = 0
DETERMINATION OF SCAN LINE CONVERSION MODE CONVERT IN SUCH A MANNER THAT 1/d OF NUMBER OF PANEL EFFECTIVE DISPLAY LINES IS IN CONFORMITY WITH NUMBER OF DRIVE LUMINANCE SIGNAL LINES
DETERMINATION OF SCAN LINE CONVERSION MODE CONVERT IN SUCH A MANNER THAT NUMBER OF PANEL EFFECTIVE DISPLAY LINES IS IN CONFORMITY WITH NUMBER OF DRIVE LUMINANCE SIGNAL LINES
DETERMINATION OF SCAN LINE CONVERSION MODE CONVERT IN SUCH A MANNER THAT NUMBER OF PANEL EFFECTIVE DISPLAY LINES IS IN CONFORMITY WITH NUMBER OF DRIVE LUMINANCE SIGNAL LINES

Fig.5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INPUT IMAGE DATA
DRIVE LUMINANCE DATA
DRIVE OUTPUT PULSE WITH RESPECT TO EACH COLUMN INTERCONNECTION
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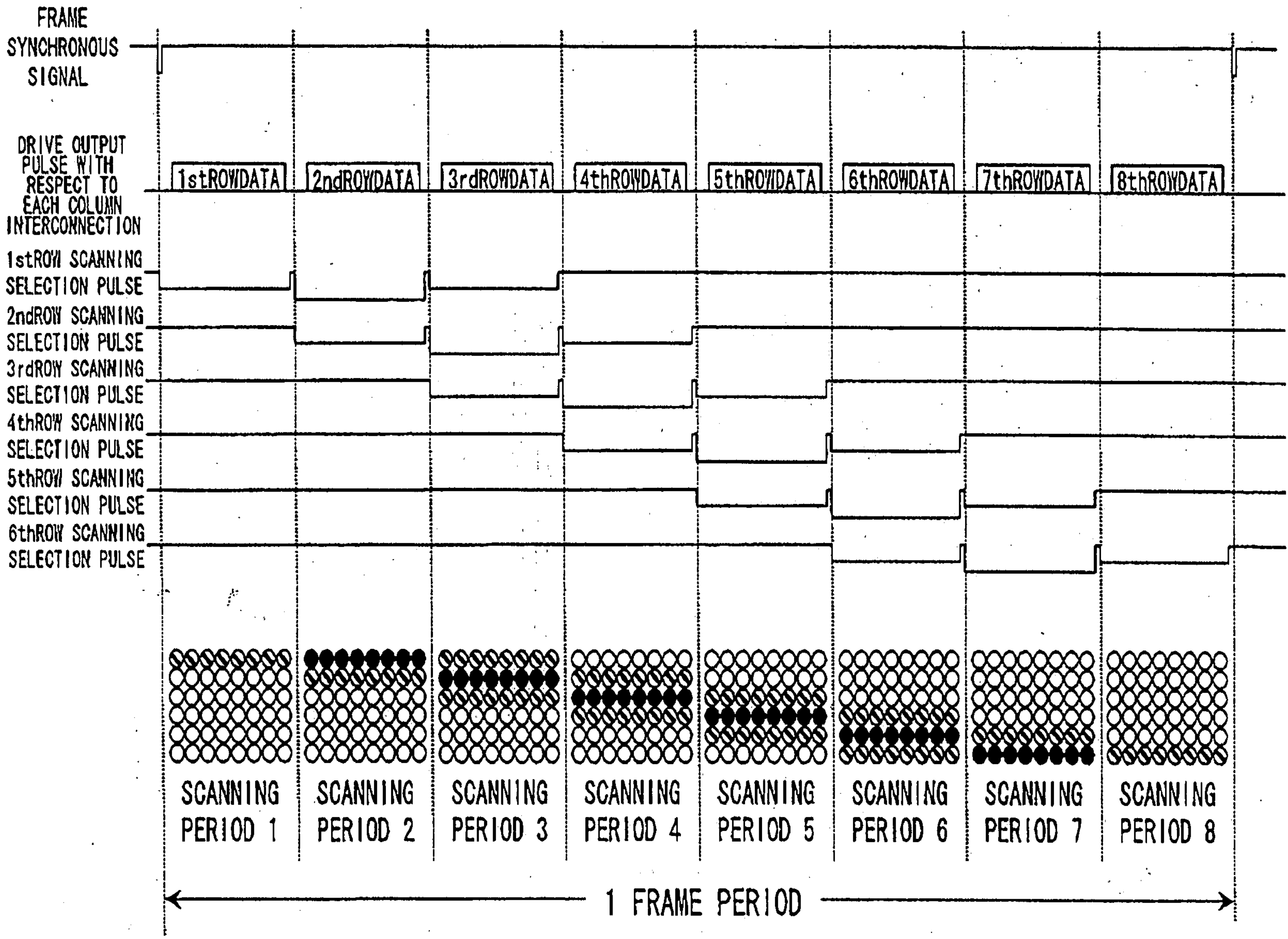
SECOND ROW SCANNING SELECTION PULSE
THIRD ROW SCANNING SELECTION PULSE
FOURTH ROW SCANNING SELECTION PULSE
FIFTH ROW SCANNING SELECTION PULSE
SIXTH ROW SCANNING SELECTION PULSE
LINE1 LUMINANCE DATA
LINE2 LUMINANCE DATA
LINE3 LUMINANCE DATA
LINE4 LUMINANCE DATA
LINE5 LUMINANCE DATA
LINE6 LUMINANCE DATA
LINE7 LUMINANCE DATA
12345678
1stROW DATA
2ndROW DATA
3rdROW DATA
4thROW DATA
5thROW DATA
6thROW DATA
7thROW DATA
SCANNING PERIOD 1
SCANNING PERIOD 2
SCANNING PERIOD 3
SCANNING PERIOD 4
SCANNING PERIOD 5
SCANNING PERIOD 6
SCANNING PERIOD 7
SCANNING PERIOD 8
SUBFRAME PERIOD 1
SUBFRAME PERIOD 2
1 FRAME PERIOD

Fig.6


FRAME SYNCHRONOUS SIGNAL
DRIVE OUTPUT PULSE WITH RESPECT TO EACH COLUMN INTERCONNECTION
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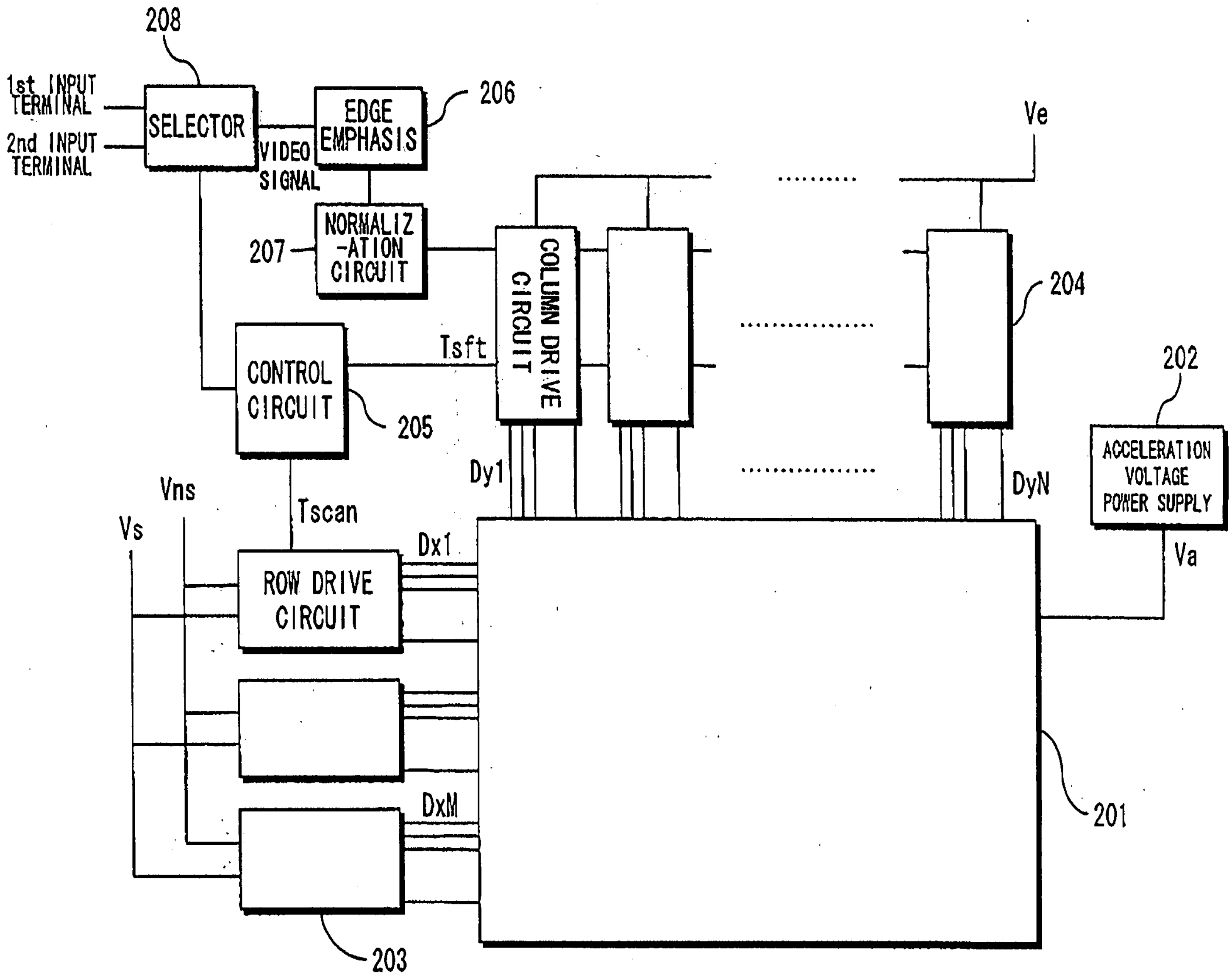
2ndROWDATA
3rdROWDATA
4thROWDATA
5thROWDATA
6thROWDATA
7thROWDATA
8thROWDATA
1stROW SCANNING SELECTION PULSE
2ndROW SCANNING SELECTION PULSE
3rdROW SCANNING SELECTION PULSE
4thROW SCANNING SELECTION PULSE
5thROW SCANNING SELECTION PULSE
6thROW SCANNING SELECTION PULSE
SCANNING PERIOD 1
SCANNING PERIOD 2
SCANNING PERIOD 3
SCANNING PERIOD 4
SCANNING PERIOD 5
SCANNING PERIOD 6
SCANNING PERIOD 7
SCANNING PERIOD 8
1 FRAME PERIOD

Fig.7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1st INPUT TERMINAL
2nd INPUT TERMINAL
SELECTOR
VIDEO SIGNAL
EDGE EMPHASIS
206
NORMALIZ-ATION CIRCUIT
207
Ve
COLUMN DRIVE CIRCUIT
204
CONTROL CIRCUIT
205
Tsft
202
ACCELERATION VOLTAGE POWER SUPPLY
Dy1
DyN
Vns
Vs
Tscan
Dx1
ROW DRIVE CIRCUIT
Va
DxM
201
203

Fig.8

THREE LINE SIMULTANEOUS COLUMN LINE WAVE FORMS

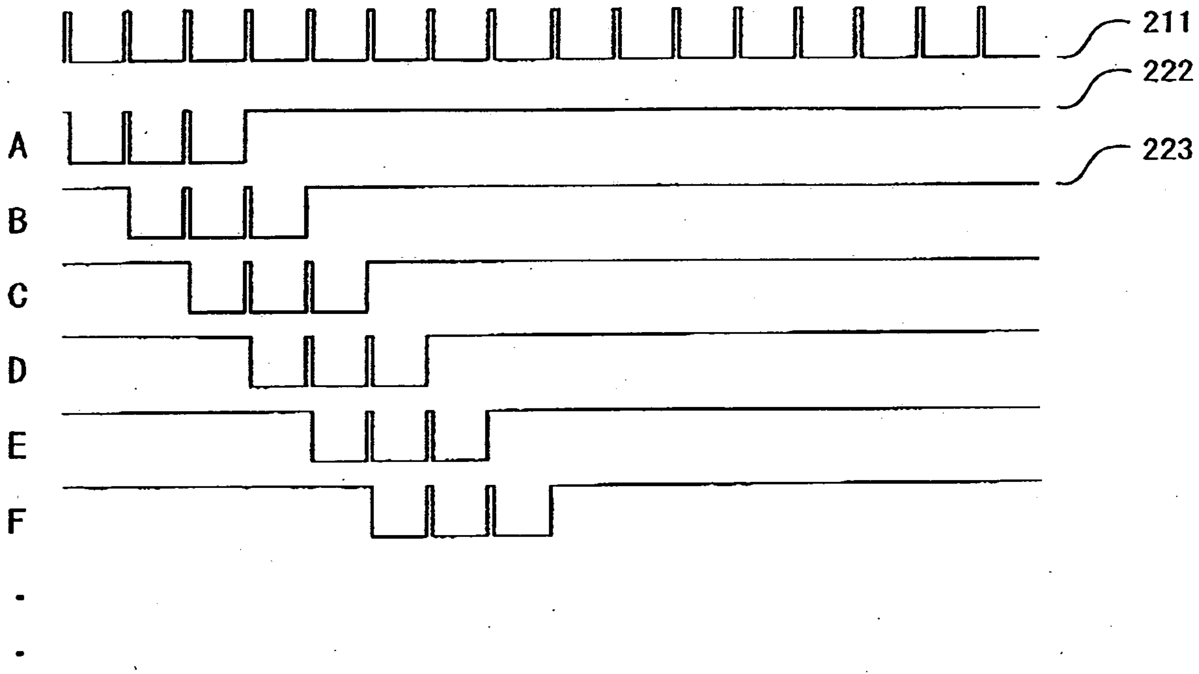


Fig.9

ORIGINAL IMAGE

	60	78	50	100	55	55	55	55
	80	80	57	90	60	60	40	35
A	100	107	140	130	102	60	55	30
B	120	140	155	180	100	45	58	20
C	140	150	170	200	180	100	80	50
D	160	120	70	100	40	100	56	30
E	150	140	90	150	50	110	60	20
F	140	100	90	130	90	180	130	100
G	130	90	80	100	70	205	170	150
H	120	70	77	89	178	220	190	180

Fig. 10A

EDGE EMPHASIS TO ORIGINAL IMAGE (2B-A/2-C/2)

80	67.5	19	65	41.5	62.5	25	27.5
100	104	174	125	124	67.5	61	32.5
120	152	155	195	59	10	48.5	0
140	170	228	260	290	128	103	75
175	95	10	25	-35	95	42	25
150	170	100	185	35	80	27	-25
140	85	95	135	120	203	145	115
130	95	76.5	90.5	6	210	180	160

Fig. 10B

MIDSTREAM OF NORMALIZATION (HALF TRANSITION)

80	67.5	19	65	41.5	62.5	25	27.5
100	104	174	125	124	67.5	61	32.5
120	152	155	196	67.8	10	48.5	0
140	170	228	260	281	128	103	75
175	95	10	26.3	-26	95	42	18.8
150	170	100	185	26.3	80	27	-25
140	85	95	135	120	203	145	109
130	95	76.5	90.5	6	210	180	160

Fig. 10C

NORMALIZE RESULT OF EDGE EMPHASIS TO 0 TO 255

80	67.5	19	65	41.5	62.5	25	27.5
100	104	174	125	124	67.5	61	32.5
120	152	155	196	67.8	10	48.5	0
140	170	228	255	255	128	103	75
175	95	10	26.3	0	95	42	18.8
150	170	100	185	26.3	80	27	0
140	85	95	135	120	203	145	109
130	95	76.5	90.5	6	210	180	160

Fig. 10D

TREBLE VALUE OF ORIGINAL IMAGE

180	234	150	300	165	165	165	165
240	240	171	270	180	180	120	105
300	321	420	390	306	180	165	90
360	420	465	540	300	135	174	60
420	450	510	600	540	300	240	150
480	360	210	300	120	300	168	90
450	420	270	450	150	330	180	60
420	300	270	390	270	540	390	300
390	270	240	300	210	615	510	450
360	210	231	267	534	660	570	540

Fig. 10E

ONLY THREE LINE SIMULTANEOUS DRIVE

240	265	247	320	217	175	150	120
300	327	352	400	262	165	153	85
360	397	465	510	382	205	193	100
420	410	395	480	320	245	194	100
450	410	330	450	270	310	196	100
450	360	250	380	180	390	246	150
420	330	260	380	210	495	360	270
390	260	247	319	338	605	490	430

Fig. 10F

THREE LINE SIMULTANEOUS DRIVE BY VALUE AFTER EDGE EMPHASIS

300	323	348	385	225	140	135	60
360	426	557	580	473	205	213	108
435	417	393	480	314	233	194	100
465	435	338	470	290	303	172	75
465	350	205	345	120	378	214	115
420	350	272	411	161	493	352	250

Fig. 10G

THREE LINE SIMULTANEOUS DRIVE BY VALUE AFTER NORMALIZATION

300	323	348	386	233	140	135	60
360	426	557	576	447	205	213	108
435	417	393	478	323	233	194	93.8
465	435	338	466	281	303	172	93.8
465	350	205	346	146	378	214	128
420	350	272	411	152	493	352	269

Fig. 10H

TWO LINE SIMULTANEOUS COLUMN LINE WAVE FORMS

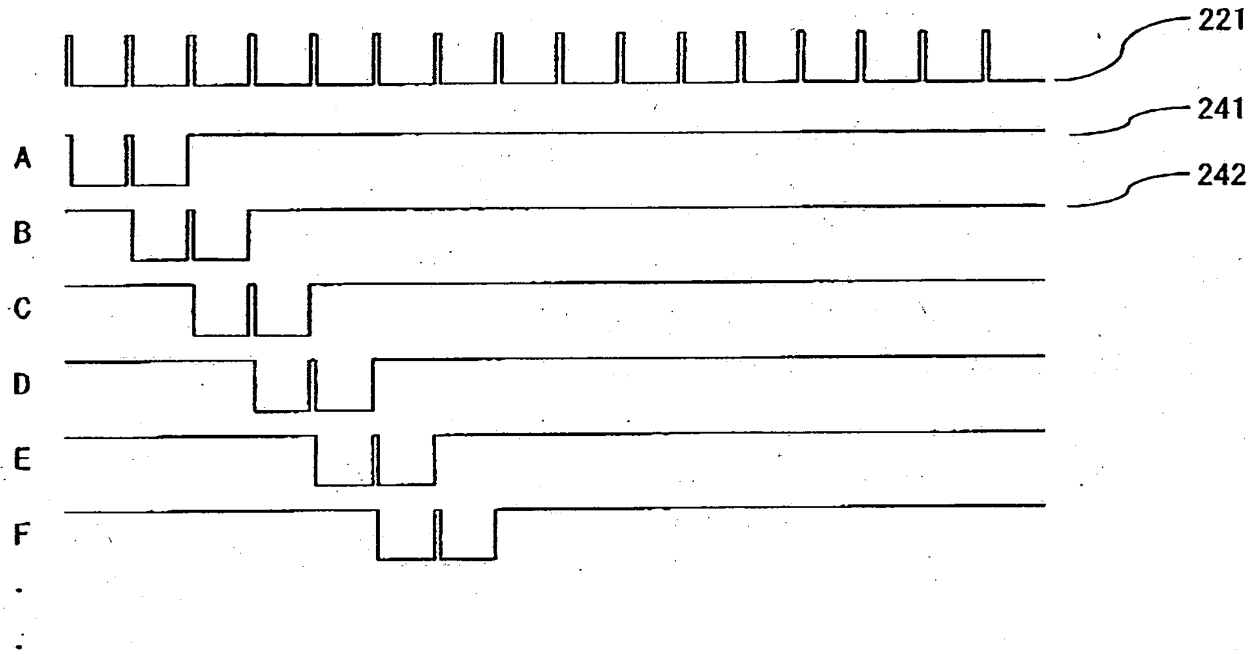


Fig. 11

ORIGINAL IMAGE

	60	78	50	100	55	55	55	55
	80	80	57	90	60	60	40	35
A	100	107	140	130	102	60	55	30
B	120	140	155	180	100	45	58	20
C	140	150	170	200	180	100	80	50
D	160	120	70	100	40	100	56	30
E	150	140	90	150	50	110	60	20
F	140	100	90	130	90	180	130	100
G	130	90	80	100	70	205	170	150
H	120	70	77	89	178	220	190	180

Fig. 12A

EDGE EMPHASIS TO
ORIGINAL IMAGE(1.5B-A/2)

90	81	60.5	85	62.5	62.5	32.5	25
110	121	182	150	123	60	62.5	27.5
130	157	163	205	99	37.5	59.5	15
150	155	178	210	220	128	91	65
170	105	20	50	-30	100	44	20
145	150	100	175	55	115	62	15
135	80	90	120	110	215	165	140
125	85	75	85	60	218	180	175
115	60	75.5	83.5	232	228	200	195

Fig. 12B

MIDSTREAM OF NORMALIZATION
(ONLY HALF TRANSITION)

90	81	60.5	85	62.5	62.5	32.5	25
110	121	182	150	123	60	62.5	27.5
130	157	163	205	99	37.5	59.5	15
150	155	178	210	213	128	91	65
170	105	20	50	-30	100	44	20
145	150	100	175	47.5	115	62	15
135	80	90	120	110	215	165	140
125	85	75	85	60	218	190	175
115	60	75.5	83.5	232	228	200	195

Fig. 12C

NORMALIZE RESULT
OF EDGE EMPHASIS TO 0 TO 255

90	81	60.5	85	62.5	62.5	32.5	25
110	121	182	150	123	60	62.5	27.5
130	157	163	205	99	37.5	59.5	15
150	155	178	210	213	128	91	65
170	105	20	50	0	100	44	20
145	150	100	175	47.5	115	62	15
135	80	90	120	110	215	165	140
125	85	75	85	60	218	190	175
115	60	75.5	83.5	232	228	200	195

Fig. 12D

DOUBLE VALUE OF ORIGINAL IMAGE

120	156	100	200	110	110	110	110
160	160	114	180	120	120	80	70
200	214	280	260	204	120	110	60
240	280	310	360	200	90	116	40
280	300	340	400	360	200	160	100
320	240	140	200	80	200	112	60
300	280	180	300	100	220	120	40
280	200	180	260	180	360	260	200
260	180	160	200	140	410	340	300
240	140	154	178	356	440	380	360

Fig. 12E

ONLY TWO LINE SIMULTANEOUS DRIVE

140	158	107	190	115	115	95	90
180	187	197	220	162	120	95	65
220	247	295	310	202	105	113	50
260	290	325	380	280	145	138	70
300	270	240	300	220	200	136	80
310	260	160	250	90	210	116	50
290	240	180	280	140	290	190	120
270	190	170	230	160	385	300	250
250	160	157	189	248	425	360	330

Fig. 12F

TWO LINE SIMULTANEOUS DRIVE
BY VALUE AFTER EDGE EMPHASIS

200	202	242	235	186	123	95	52.5
240	277	344	355	222	97.5	122	42.5
280	312	340	415	319	165	151	80
320	260	198	260	190	228	135	85
315	255	120	225	25	215	106	35
280	230	190	295	165	330	227	155
260	165	165	205	170	433	355	315

Fig. 12G

TWO LINE SIMULTANEOUS DRIVE
BY VALUE AFTER NORMALIZATION

200	202	242	235	186	123	95	52.5
240	277	344	355	222	97.5	122	42.5
280	312	340	415	312	165	151	80
320	260	198	260	213	228	135	85
315	255	120	225	47.5	215	106	35
280	230	190	295	158	330	227	155
260	165	165	205	170	433	355	315

Fig. 12H

THREE LINE AUXILIARY COLUMN LINE WAVE FORMS

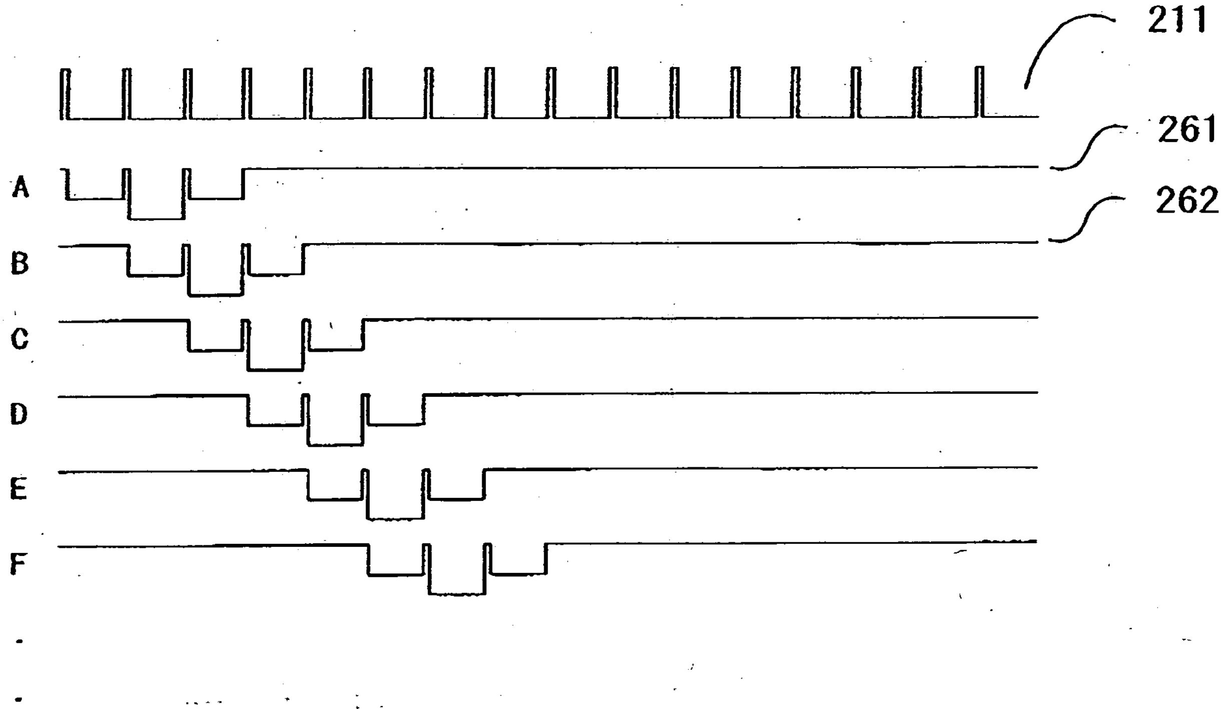


Fig. 13

ORIGINAL IMAGE

	60	78	50	100	55	55	55	55
	80	80	57	90	60	60	40	35
A	100	107	140	130	102	60	55	30
B	120	140	155	180	100	45	58	20
C	140	150	170	200	180	100	80	50
D	160	120	70	100	40	100	56	30
E	150	140	90	150	50	110	60	20
F	140	100	90	130	90	180	130	100
G	130	90	80	100	70	205	170	150
H	120	70	77	89	178	220	190	180

Fig.14A

EDGE EMPHASIS TO ORIGINAL IMAGE (2B-A/2-C/2)

80	67.5	19	65	41.5	62.5	25	27.5
100	104	174	125	124	67.5	61	32.5
120	152	155	195	59	10	48.5	0
140	170	228	260	290	128	103	75
175	95	10	25	−35	95	42	25
150	170	100	185	35	80	27	−25
140	85	95	135	120	203	145	115
130	95	76.5	90.5	6	210	180	160

Fig.14B

MIDSTREAM OF NORMALIZATION (HALF TRANSITION)

80	67.5	19	65	41.5	62.5	25	27.5
100	104	174	125	124	67.5	61	32.5
120	152	155	196	67.8	10	48.5	0
140	170	228	260	281	128	103	75
175	95	10	26.3	−26	95	42	18.8
150	170	100	185	26.3	80	27	−25
140	85	95	135	120	203	145	109
130	95	76.5	90.5	6	210	180	160

Fig.14C

NORMALIZE RESULT OF EDGE EMPHASIS TO 0 TO 255

80	67.5	19	65	41.5	62.5	25	27.5
100	104	174	125	124	67.5	61	32.5
120	152	155	196	67.8	10	48.5	0
140	170	228	255	255	128	103	75
175	95	10	26.3	0	95	42	18.8
150	170	100	185	26.3	80	27	0
140	85	95	135	120	203	145	109
130	95	76.5	90.5	6	210	180	160

Fig.14D

DOUBLE VALUE OF ORIGINAL IMAGE

120	156	100	200	110	110	110	110
160	160	114	180	120	120	80	70
200	214	280	260	204	120	110	60
240	280	310	360	200	90	116	40
280	300	340	400	360	200	160	100
320	240	140	200	80	200	112	60
300	280	180	300	100	220	120	40
280	200	180	260	180	360	260	200
260	180	160	200	140	410	340	300
240	140	154	178	356	440	380	360

Fig.14E

ONLY THREE LINE AUXILIARY DRIVE

150	172	149	210	136	115	103	87.5
190	204	205	245	161	113	96.5	60
230	252	303	320	242	133	124	65
270	275	275	330	210	145	126	60
295	280	250	325	225	205	138	75
305	240	160	240	110	245	151	90
285	235	175	265	130	303	210	145
265	180	169	225	214	393	310	265

Fig.14F

THREE LINE AUXILIARY DRIVE BY VALUE AFTER EDGE EMPHASIS

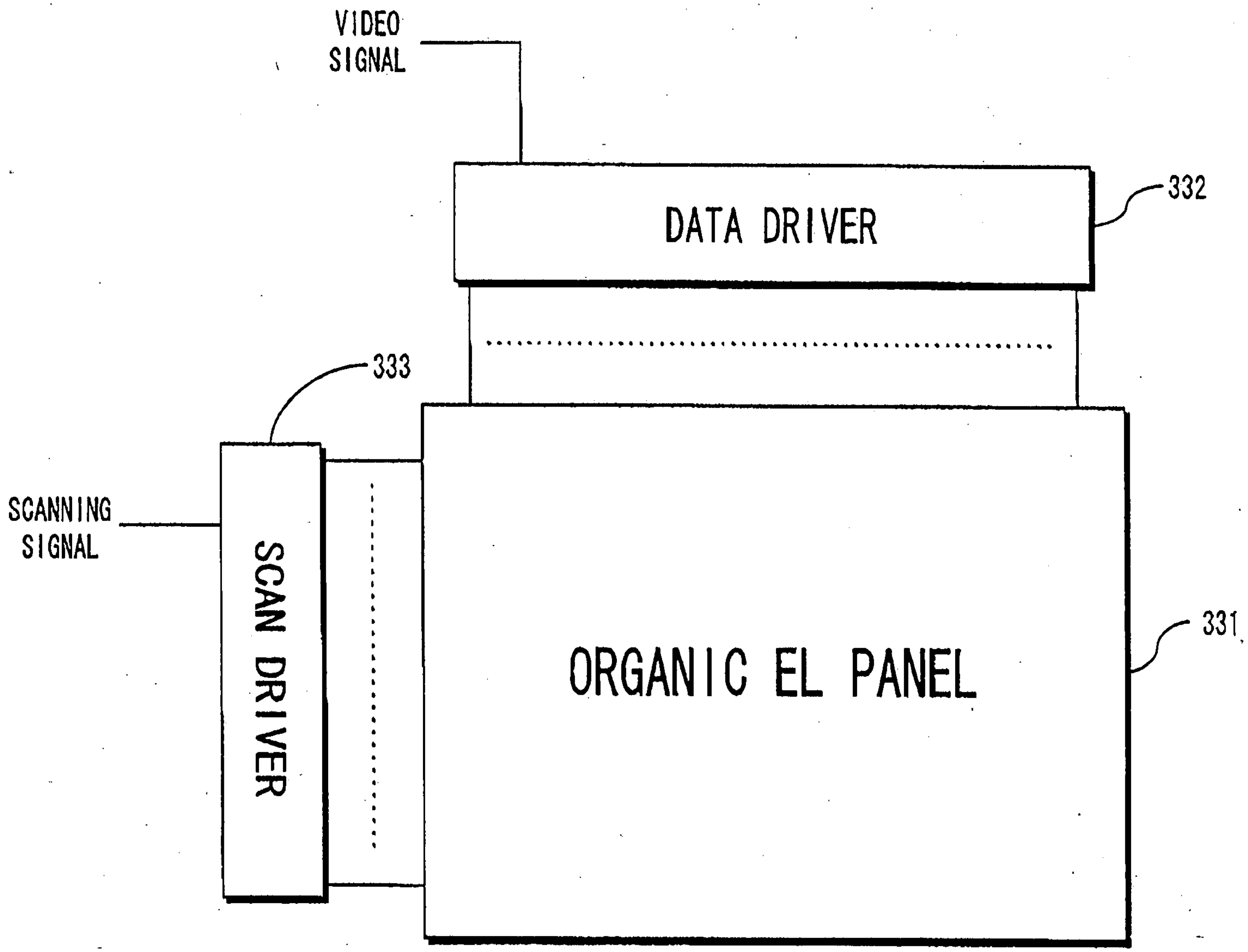
190	195	184	225	133	101	79.8	43.8
230	265	365	353	299	136	137	70
278	284	274	338	187	121	121	50
303	303	283	365	290	215	138	75
320	223	108	185	42.5	236	128	70
285	260	186	298	98	286	190	113

Fig.14G

THREE LINE AUXILIARY DRIVE BY VALUE AFTER NORMALIZATION

190	195	184	226	137	101	79.8	43.8
230	265	365	351	285	136	137	70
278	284	274	337	195	121	121	46.9
303	303	283	361	268	215	138	84.4
320	223	108	186	73.1	236	128	73.1
285	260	186	298	89.3	286	190	134

Fig.14H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DATA DRIVER
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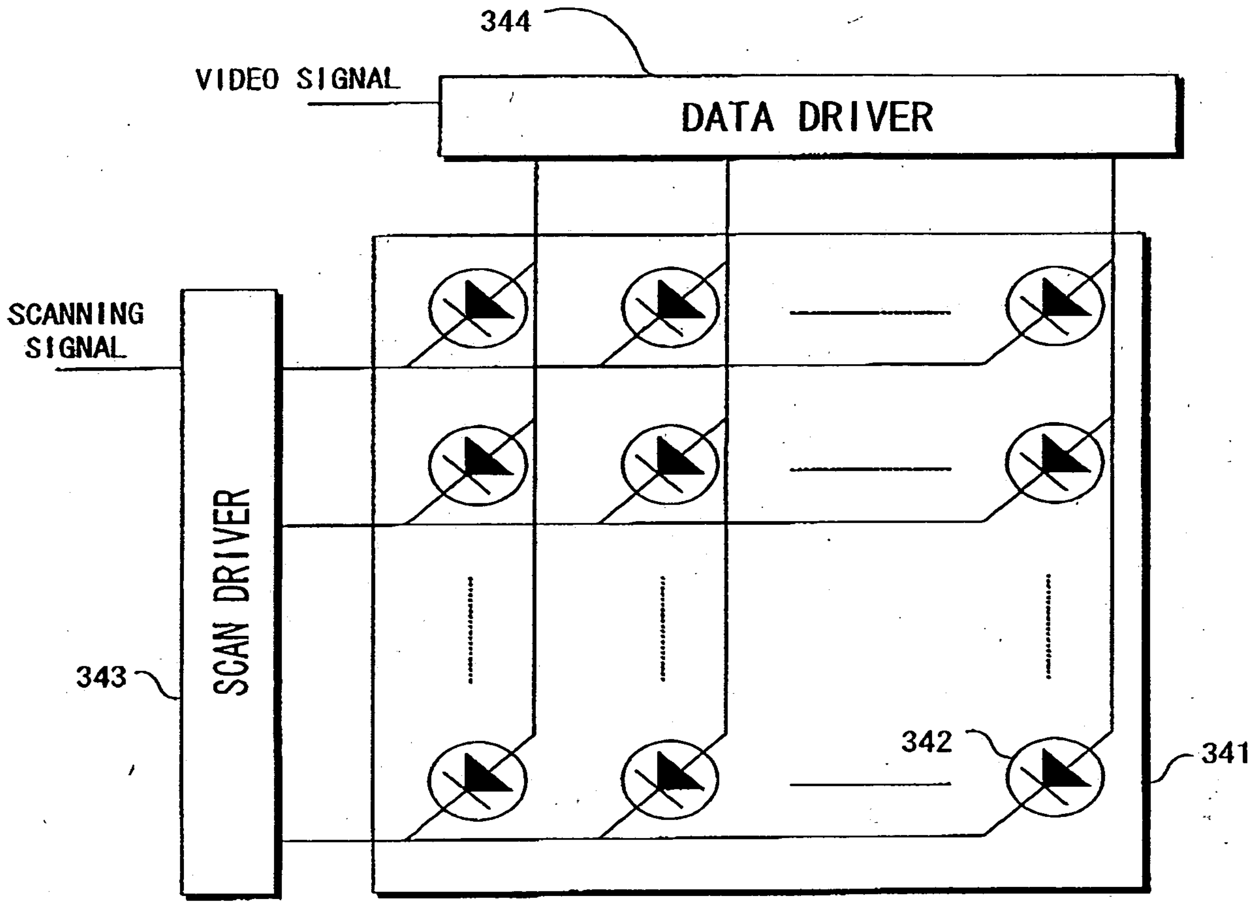
333
SCANNING SIGNAL
SCAN DRIVER
ORGANIC EL PANEL
331

Fig.15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VIDEO SIGNAL
DATA DRIVER
SCANNING SIGNAL
SCAN DRIVER
343
342
341

Fig. 16

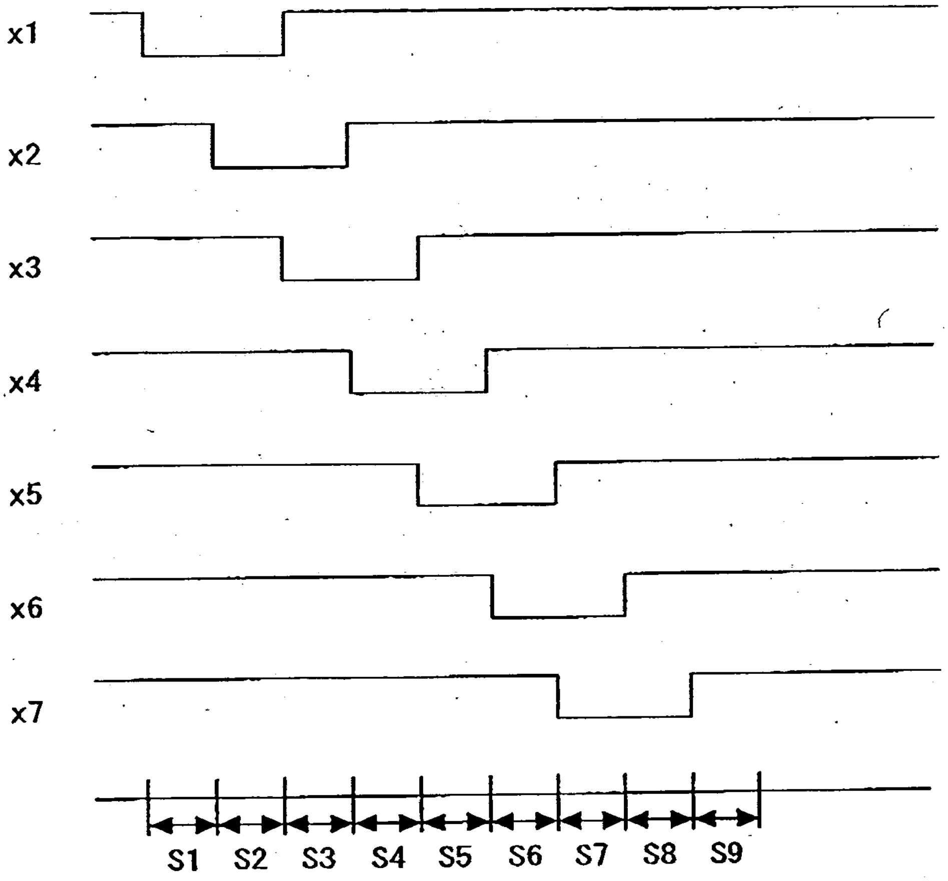

Fig. 17

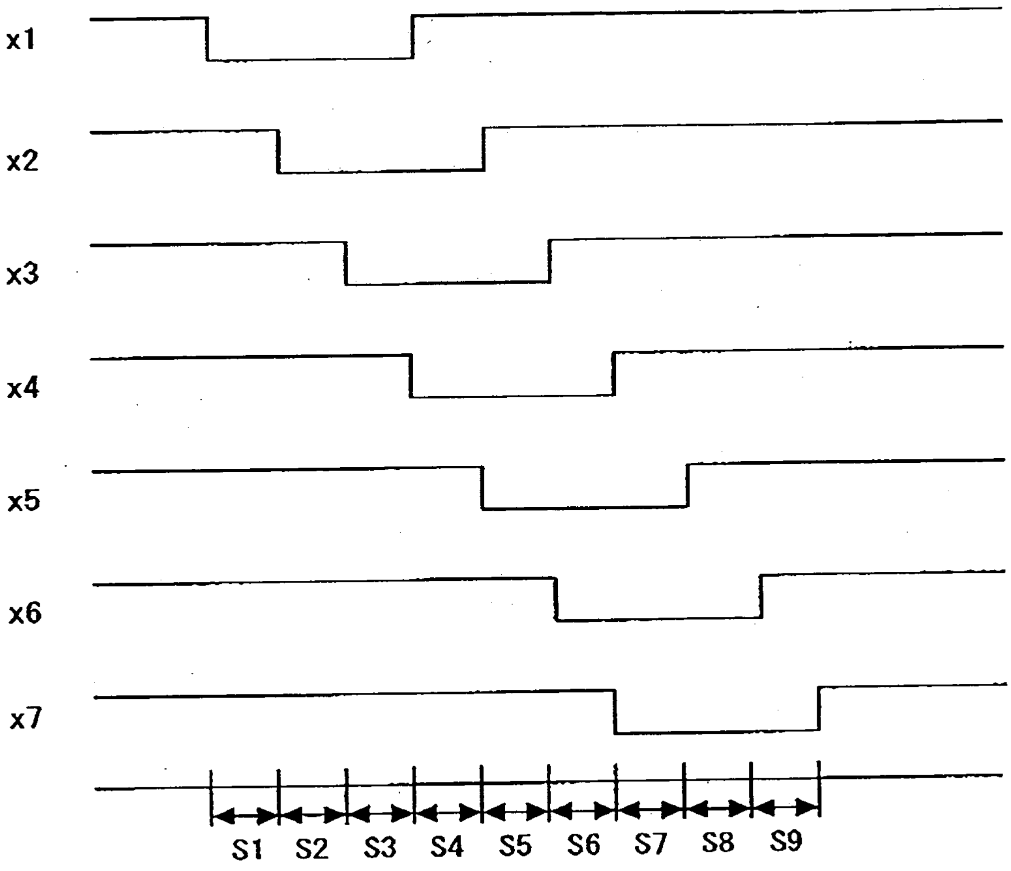

Fig.18